

EXTRACTS
FROM THE
TRANSACTIONS
OF THE
SOCIETY OF
MOTION PICTURE
ENGINEERS

MEETING of JULY 16-17, 1917

CHICAGO

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SOCIETY OF
MOTION PICTURE ENGINEERS
WASHINGTON, D. C.

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SOCIETY OF MOTION PICTURE ENGINEERS

Membership in the Society of Motion Picture Engineers stands for unselfish service to the Industry. Applications for membership are by invitation and endorsement. All checks should be made payable to the Society of Motion Picture Engineers.

All receipts are expended directly to promote the objects of the Society and the interests of its members. There are no salaries or emoluments of any kind.

The following are extracts from the By-Laws:

The objects of the Society are: The advancement in the theory and practice of motion picture engineering and the allied arts and sciences, the standardization of the mechanisms and practices employed therein, and the maintenance of a high professional standing among its members.

An Active Member is one who is actually engaged in designing, developing or manufacturing materials, mechanisms or processes used in this or allied arts; and an Associate Member is one who, though not eligible to membership in the active class, is interested directly in the art.

Any person of good character may be a member in any or all classes to which he is eligible.

Prospective members shall be proposed in writing by at least two members in good standing, and may be elected only by the unanimous vote of the Board of Governors.

All applications for membership or transfers in class shall be made on blank forms provided for the purpose, and shall be accompanied by the required fee.

The entrance fee (for both Active and Associate Members) shall be twenty-five dollars (\$25.00). The annual dues for Active Members shall be ten dollars (\$10.00), payable in advance on July 1st of each year. The annual dues for Associate Members shall be five dollars (\$5.00), payable in advance on July 1st of each year. That is, the total fee for the first year, which includes the entrance fees and first annual dues, is \$35.00 for active members; and similarly \$30.00 for associate members.

PRESIDENT'S ADDRESS

Chicago, July 16, 17, 1917.

The Society of Motion Picture Engineers is rapidly losing its aspect as a collection of individuals and instead is commanding a national recognition as a solidified body. I may have taken a personal pride in complimentary references to my connection with the initial establishment of this Society, but my own individuality is rapidly being lost in the office of President, as the Society becomes more and more useful. And this is as it should be, and confirms what has been said before, that this Society's recognition and the regard in which it is held by the industry will be directly in proportion to the unselfish service its individual members are willing to give collectively.

And this has its own reward, too, for there is a pleasure in unselfish service, which many of you know, a lasting satisfaction which no pecuniary reward can give. It is no particular credit to one to do a thing for a salary, anyone can do that; the most enjoyment in life comes from doing for the love of doing.

In the same spirit let us now establish as many standards as the data before us warrants and prepare to continue the work at each succeeding meeting. Certainly there's plenty that can be done when standardization is accomplished. Take projectors for an example:

It is curious anomaly that in the motion picture projecting machine business the usual rule of supply and demand does not hold good. One may buy anything else, a watch, an automobile a house, paying as much or as little as one chooses, getting increased value with increased cost, but for a motion picture projector, one pays about the same price for all makes, a remarkable situation, surely. Suppose we all had to pay \$1000 for automobiles—no more, no less.

There is not today a picture equipment comparable with the magnificence of a great many of the theatres built and many more projected. No matter how much the builder of a fine theatre may desire a correspondingly fine equipment, he can't get it, it doesn't exist. He may pay as much or as little as he likes for music, lighting and other accessories, but when it comes to the picture machine, that which produces the thing he sells

to the public, he is limited to a choice in name, mostly, for the three or four machines available all sell for about the same price.

About twenty-five years ago, by accident, or shall I say, the irony of fate, it fell to my lot to make and exhibit the first of the present type longitudinal projecting machines, a type which has become universal the world over. This early model has been in the United States National Museum for twenty-two years, and may still be seen on exhibit in the Graphic Arts department.

Now, it certainly seems to me that this is long enough to wait for a marked advance, and that the problem is squarely up to the motion picture engineers, including myself with perhaps added responsibility by reason of this early work, to give the fine theatres a correspondingly fine projecting machine. And in order that those of you who may be interested in designing such, may have the benefit of the data I and my engineer staff have developed by costly experiment, I shall be glad to show you, as individuals, what we have learned in order that your work may receive the impetus of enthusiasm which comes from a newly opened door in any art; as, for example, when the newly discovered formula was made to the engineers of that time that 3.1416 times the diameter would always give the circumference of a circle.

Similarly, this picture information is yours, but to save myself the criticism of using my office for selfish publicity, I suggest that this be not published in the "Transactions" of this meeting.

Surely, it is time for a duplex, electrically-driven, self-controlled, automatic picture projector, a fine, high priced machine for fine theatres, and I earnestly urge you projector engineers to get busy along this line.

It may be remembered by some of you that the first steam engine employed a boy operator to manipulate the crank which shifted the entering steam from one end to the other of the cylinder of the engine. But this hand operation only continued for a few weeks before the boy ingeniously fixed it so that the engine automatically shifted the slide valve. This boy's cleverness made possible the development of the railway locomotive, perhaps man's most effective civilizing agent.

It is not particularly creditable to we engineers that we are now only just beginning to think of an advance over the crank turning stage in the motion picture business.

There is unlimited opportunity for advance, both inside and outside the industry as an entertainment. If there had been any question before as to the need for a standardizing body, such as the Society of Motion Picture Engineers, it vanished when the Federal Government, unable to find any authoritative standard, appointed me as an individual, to write the specifications for a war service motion picture camera for the Army and Navy in order that official pictures made of this great war would be alike in quality and frame line at least. Specifications were prepared with such assistance from our camera members as could be secured in the forty-eight hours allowed, the credit therefore being given our Society for the added prestige, and to publish the fact that there is now an authoritative body to whom one may apply for information of this very kind.

Our standards, definitions of trade terms, and uniform methods will soon come to be consulted in writing specifications, in trade contracts, in court contests, etc., and I think we should not only be a bit more self-respecting when we remember this, but that we should also feel our responsibility to set standards with due regard for the rights of all. This will tend to give us a more creditable standing everywhere. It is a bit embarrassing to me today to notice the suspicion in which I am held by strangers the moment they find I am talking motion picture business.

Fair treatment of the other fellow is a great business asset of which the motion picture industry hasn't yet taken full advantage. It is a builder of confidence in any industry which returns its cost a hundred fold in dollars and cents. If this spirit permeates the printed Transactions of this Society, as I believe is our intent, it will do our Industry untold good as the copies get wider and wider distribution. When this confidence in our integrity of purpose and accomplishments is entertained by the big men in our industry, they will buy quantities of these printed transactions for distribution among their employees in order that they may be guided by the standards, the working data, and technical information contained therein, and the Industry at large will greatly benefit thereby.

Gentlemen, the time is near when we may take creditable pride in the work we have done, are doing, and plan to do.

Membership in the Society of Motion Picture Engineers, is a signal distinction.

C. FRANCIS JENKINS.

NOTICE

This booklet is printed primarily for distribution outside the membership of the Society of Motion Picture Engineers and so does not contain more of the minutes of the Chicago meeting than is thought would be of interest to the Industry at large.

The report and recommendation of the Committee on Optics, which was approved and adopted, appears herein. The other Committees reported progress in their work but asked further time for investigation before making recommendations, which later will doubtless appear in the Transactions of the next, the October, meeting.

The standards recommended herein are those which met the unanimous approval of the engineers present at the Chicago meeting; all subjects about which there was any difference of opinion being laid over for further consideration.

The few definitions herein are those which were adopted to be added to the definition of terms approved at the Atlantic City meeting, and which appear in the Transactions of that meeting.

REPORT BY THE COMMITTEE ON OPTICS TO THE SOCIETY OF MOTION PICTURE ENGINEERS

GENTLEMEN:

Your Committee on Optics begs to offer the following suggestions:

First: That the following focal lengths may be accepted as standard:

4 inches	6 inches
4- $\frac{1}{4}$ "	6- $\frac{1}{4}$ "
4- $\frac{1}{2}$ "	6- $\frac{1}{2}$ "
4- $\frac{3}{4}$ "	6- $\frac{3}{4}$ "
5 inches	7 inches
5- $\frac{1}{4}$ "	7- $\frac{1}{4}$ "
5- $\frac{1}{2}$ "	7- $\frac{1}{2}$ "
5- $\frac{3}{4}$ "	7- $\frac{3}{4}$ "
6 inches	8 inches
	8- $\frac{1}{2}$ inches
	9 inches

The small differences in magnification on the screen, caused by increasing the interval between the different focal lengths from $\frac{1}{8}$ " to $\frac{1}{4}$ ", are to be taken up by fitting the size of the screen mat to the size of the picture.

Second: That the opening in the lens support of the projection apparatus be made sufficiently large as not to diaphragm down the opening of the rear component of the projection lens.

Third: That the size of the opening of the aperture plate be 0.906"x 0.68".

Fourth: That the designers of motion picture theatres be enlightened on the causes of the so-called keystone effect, and that a deviation of 12° of the optical axis of the projection apparatus from the normal on the screen should be fixed as the maximum permissible limit.

Respectfully,

HERMANN KELLNER.

Chicago, July 17, 1917.

MOTION PICTURE STANDARDS

ADOPTED IN COMMITTEE OF
THE WHOLE SOCIETY

The following have been adopted as standards by the Society of Motion Picture Engineers, and are promulgated to encourage uniformity and standard practice throughout the Industry as a whole. Their early universal adoption will save the industry a great deal of present annoyance and monetary loss.

Film speed—A film movement of sixty feet per minute through motion picture mechanisms shall be considered as standard speed.

Frame line—The dividing line between pictures on motion picture film, shall lie exactly midway between the marginal perforations.

Projection angle—The maximum permissible angle in picture projection shall not exceed twelve degrees (12°) from a perpendicular to the screen surface.

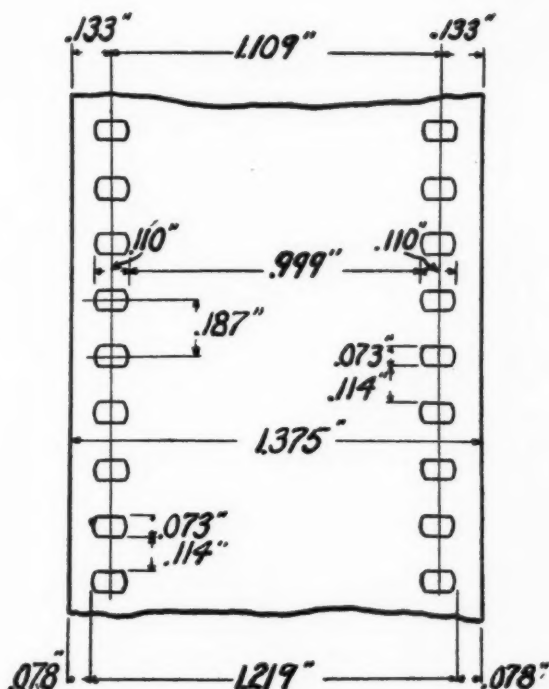
Projection lens foci—The Focus of motion picture projection lenses shall increase in $\frac{1}{4}$ " steps to 8 inches and from 8 to 9 in $\frac{1}{2}$ -inch steps.

Projection lens mounting—Picture projecting lenses shall be so mounted that the light from the film picture aperture shall have an uninterrupted full path to the rear component of the lens.

Projecting lens height—The standard height from the door to the center of the projecting lens of a motion picture machine shall be 48 inches.

Picture aperture—The standard film picture aperture in a projecting machine shall be 0.906 inch wide and 0.6795 inch high, namely, $29/32$ " and $87/128$ ".

Film perforation—The dimensions and location of film perforation shall be in accord with the illustrating diagram herewith.



Standard picture film—Shall be one and one-third inches wide, and carry a picture for each four perforations, the vertical position of the picture being longitudinal of the film.

Lantern slide mat opening—A standard opening in mats of lantern slides for use in conjunction with motion pictures shall be 3 inches wide by $2\frac{1}{4}$ inches high.

Thumb mark—The thumb mark spot on a lantern slide shall be located in the lower left hand corner next the reader when the slide is held so as to be read against a light.

Lantern strip—A red binding strip to be used on the lower edge of the lantern slide.

MOTION PICTURE NOMENCLATURE

ADOPTED IN COMMITTEE OF
THE WHOLE SOCIETY

Condensers:

Collector lens—the lens next the source of light.

Converging lens—the lens which converges the light on the picture aperture.

Middle lens—of a three-lens combination, the lens lying between the arc lens and the converging lens.

Frame line—The dividing line between two pictures on a motion picture film which forms the top and bottom respectively of adjacent pictures.

Leaders—That piece of blank film attached to the beginning of the picture series.

